

# NSF's China Office: Building Bridges



## Update for AC-ISE

Nancy Sung, Head, NSF-Beijing Office

March 2015



# Context

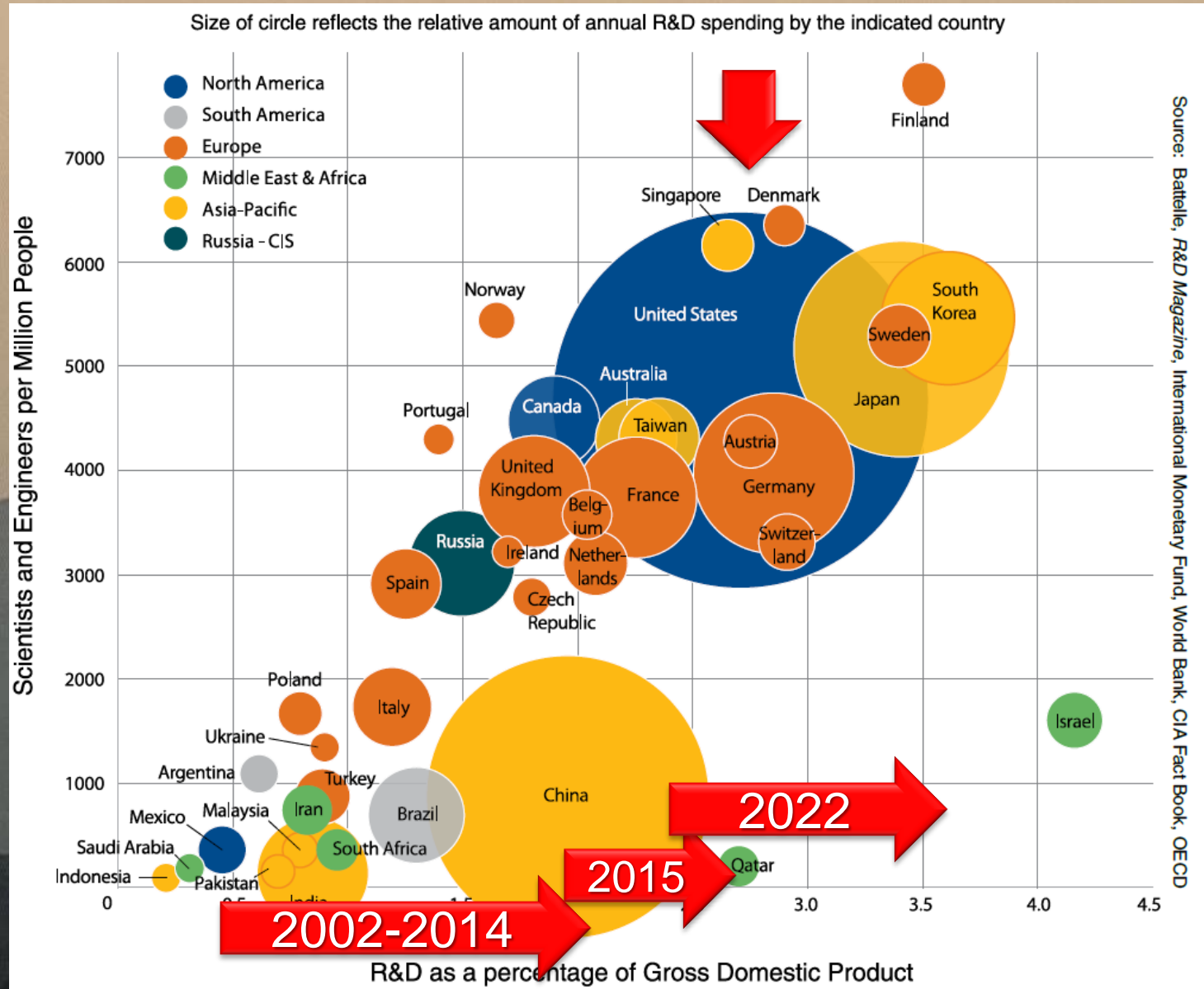
## Office roles:

- Facilitation
- Representation
- Reporting

## Science Diplomacy



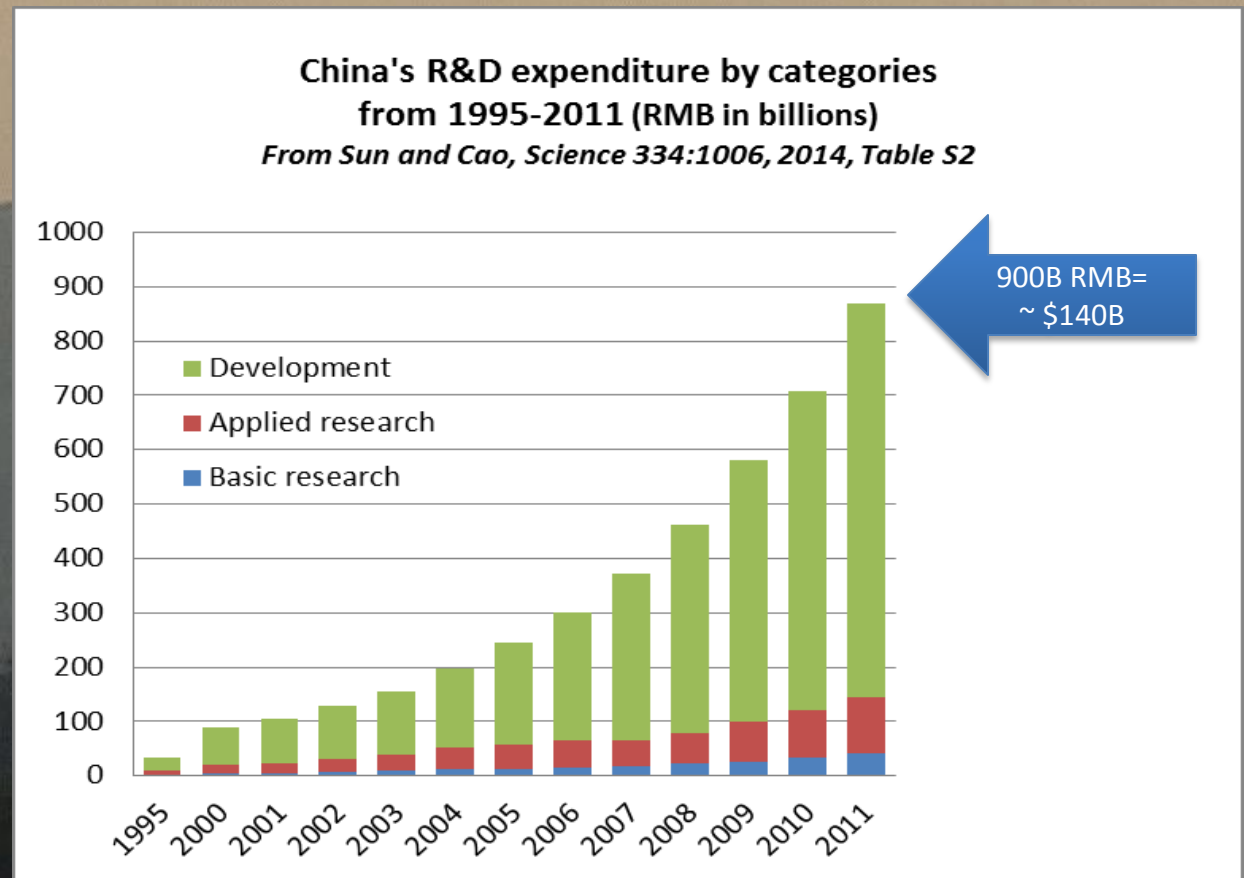
# CHINA'S S&T CONTEXT on the one hand:

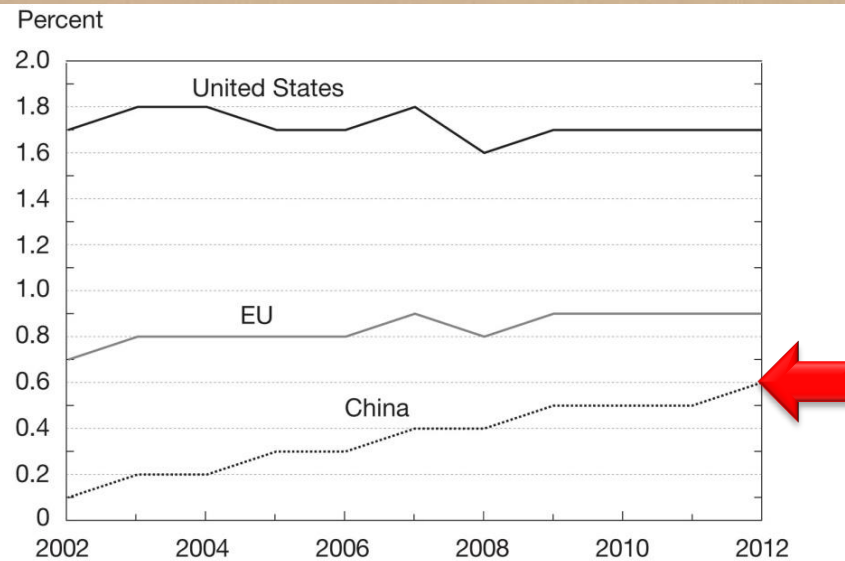




# CHINA'S S&T CONTEXT on the one hand:

- China's research intensity tripled since 1995
- Purchasing power for R&D ranks 3<sup>rd</sup> globally





EU = European Union.

NOTES: Article/citation counts are from the set of journals covered by the Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles are classified by the year they entered the database, rather than their year of publication, and are assigned to a country/economy on the basis of the institutional address(es) listed in the article. Articles are credited on a fractional-count basis (i.e., for articles with collaborating institutions from multiple countries/ regions, each country/region receives fractional credit on the basis of the proportion of its participating institutions). See appendix table 5-24 for countries included in the EU, which in this figure is treated as a single country. Citation counts are based on a 3-year period with a 2-year lag (e.g., citations for 2012 are references made in articles in the 2012 data tape to articles in the 2008–10 data tapes).

China is now the world's second largest producer of scientific publications, and

China's share of the world's top-cited 1% of S&E articles is rising.



# **CHINA's S&T CONTEXT on the other hand:**

The rapidly accelerating pace of S&T growth in China has outpaced design of institutional structures to support and sustain it.

China is conducting a major reform of its S&T funding to address the deficiencies in its existing system in order to make it more focused and effective.





# GOAL of CHINA's S&T FUNDING REFORM:

To move from 'catching up' to  
being a global leader in innovation;  
from follower to pioneer.

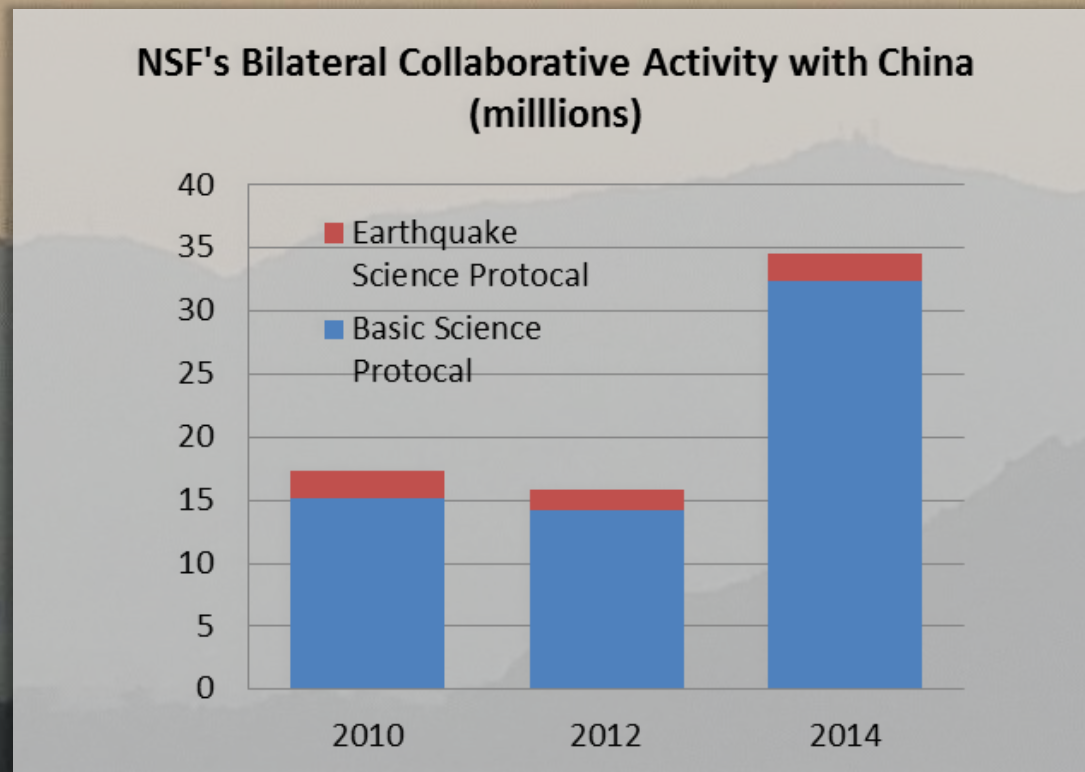


(See NSF-Beijing Perspectives  
column:[http://www.nsf.gov/od/iaa/ise/beijing/perspectives/china\\_reforms\\_st\\_funding.jsp](http://www.nsf.gov/od/iaa/ise/beijing/perspectives/china_reforms_st_funding.jsp) )

# U.S. (NSF)-CHINA CONTEXT:

The U.S. and China are each other's most significant scientific partner.

NSF: 300+ projects per year, doubled between 2012 and 2014

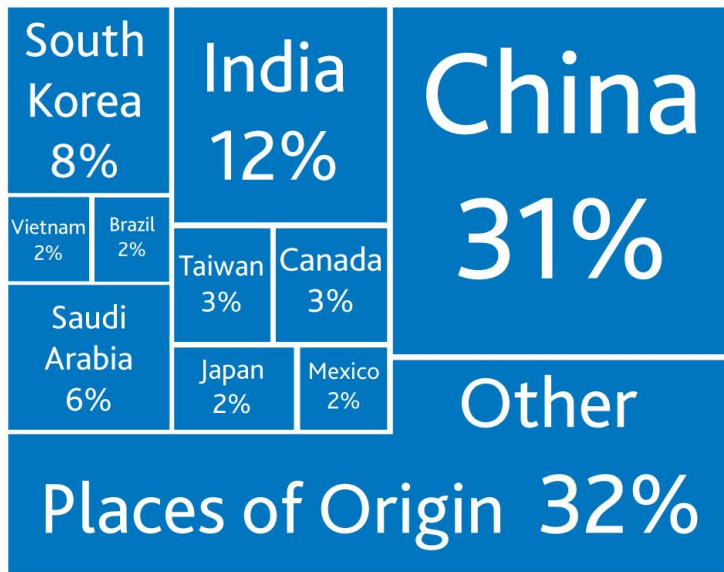




On a people-to-people level, the depth of scientific connection between the U.S. and China, over decades, is unique in the world.

In 2013/14

Places of origin of international students



50% of international students come from China, India and South Korea.

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INSTITUTE OF  
INTERNATIONAL  
EDUCATION

- Students
- New faculty in China
- Chinese diaspora in U.S.

**The once highly asymmetric U.S.-  
China S&T relationship has yielded to  
one of interdependence.**



# Risks?



“...risks need to be managed with care, but they should not be overemphasized to the extent that they eclipse a far greater risk- that of failing to participate fully and benefit from the next phase of China’s growth.”

Bound, Saunders, Wilsdon, and Adams, *China’s Absorptive State*, Nesta (U.K.) 2013.





**FACILITATION:** Most NSF-China projects are bottom-up; partnership starts small





# Leveraged Partnerships



- Build **relationship** with Chinese funding agencies.
- Identify shared priorities
- Usually start with workshops
- Coordinated support from both sides (clearance needed)
- Result: networked community of scientists working on shared questions
- Role of Beijing office is key, as is PO “champion” at HQ.

**TIME – TRUST- COMMUNICATION-CONTINUITY**

# Active Coordinated NSF-NSFC Partnerships:



**Dimensions of Biodiversity:**

**5 years/6 projects/>\$2.2 million leveraged**

**Environmental Sustainability:**

**1 year/3 projects/\$1.5 million leveraged**



# Can we build a multilane bridge, capable of supporting projects in many areas of mutual interest to both countries?

## FY 2016 NSF Priorities:

- Understanding the Brain
- Nexus of Food, Energy, Water
- Risk and Resilience



# NSF Beijing REPRESENTATION



State Council's DRC visited NSF Beijing Office on 3/4/2015.

DRC is a comprehensive policy research and consulting institution directly under the State Council and the central government. It is responsible for doing research on strategic, long-term issues in China's economic and social development, and its reforms and opening up.

DRC visited NSF BJ on 3/4/2015 to learn the following items:

- U.S. statistics on Basic Research Expenditures
- Allocating funds for bottom-up vs top-down funding for research
- Mechanisms for defining strategic research priorities; involvement of industry
- Evaluation of top-down vs bottom-up research outcomes



# As China's S&T system matures, can we work together on a solid, common foundation for science and engineering research?

## Policy issues under consideration:

- Merit review
- Allocations and 'protection' for basic science
- Evaluation of programs
- Human subject protections
- Research ethics



# NSF Beijing REPORTING

- STPI Recommendations
- NSF-Beijing Communications Plan (October 2014)

GENERAL INTEREST/PUBLIC DISTRIBUTION	SENSITIVE/LIMITED DISTRIBUTION
'From the field'- NSF in Action in China, announcements, program deadlines.	Routine Activity Reports: Ambassador, OD, OISE
Perspective Column- website, analysis of news/trends.	2-3 phone calls/week, daily email contact regarding programmatic activities
Both require clearance from embassy and OLPA.	In-depth topical reports aligned with program development priorities (2-3/year)
NOT: general news about S&T in China, or news about my activities	Examples: Polar Research in China, Brain Science in China (in preparation)

# Communications: General interest/Public Distribution


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**ABOUT THESE REPORTS**  

The National Science Foundation's (NSF) Beijing Office receives and disseminates information on research developments in China that are related to the Foundation's mission, as well as activities conducted in China with support from NSF. In addition, NSF Beijing Office staff highlight and analyze science and technology news from China. These reports provide information for use by NSF program managers and the general science and engineering community, however, they are not statements of NSF policy. These documents do not represent the official views, opinions, or policy of the National Science Foundation.

The NSF Beijing Office also suggests NSF publications of potential interest to the U.S. S&T community. Chinese translations are identified if available.

**REPORTS FROM THE FIELD**

- 2015-03-12 Workshop and Supplement Proposals: Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS) - **DEADLINE: MARCH 30, 2015** ([workshop\\_infews\\_150312.jsp](http://www.nsfbeijing.cn/news20150312.jsp))
- 2014-11-18 NSF-Beijing participates in the International Conference on Science, Technology, and Education Policy '14 (ICSTEP '14) at Zhejiang University ([http://www.nsfbeijing.cn/news20141126\\_01.html](http://www.nsfbeijing.cn/news20141126_01.html))
- 2014-10-20 Advancing U.S.-China collaboration in Polar Research: NSF Division of Polar Programs visits China ([http://www.nsfbeijing.cn/news20141126\\_01.html](http://www.nsfbeijing.cn/news20141126_01.html))
- 2014-09-16 Celebrating ten years of collaboration: National Science Foundation Division of Environmental Biology delegation visits China (<http://www.nsfbeijing.cn/news20141126.html>)
- 2014-08-15 2014 East Asia and Pacific Summer Institute (EAPSI) for US Graduate Students, China Program (<http://www.nsfbeijing.cn/news20141105.html>)
- 2014-05-29 NSF Director Dr. France Cordova Visits China (<http://www.nsfbeijing.cn/news20141015.html>)

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**China Announces Major Reform of Competitive S&T Funding**  


Photo credit: NSF Beijing office [\[Photo descriptions\]](#)

China has announced a major overhaul of its financial support and oversight for science and technology (S&T). This follows ten years of mushrooming growth, during which China's research intensity surpassed that of the European Union (EU), and its purchasing power for Research and Development (R&D) rose to third in the world behind the EU and the United States<sup>1</sup>. China now ranks second in the world in scientific publications<sup>2</sup>. The citation impact of those papers has been steadily rising<sup>3</sup>, as has its number of patents<sup>4</sup>. Concurrently China has built a network of high-speed rail with more linear track than the rest of the world combined, achieved an unmanned moon landing in 2013, and is building

# NSF Beijing REPORTING

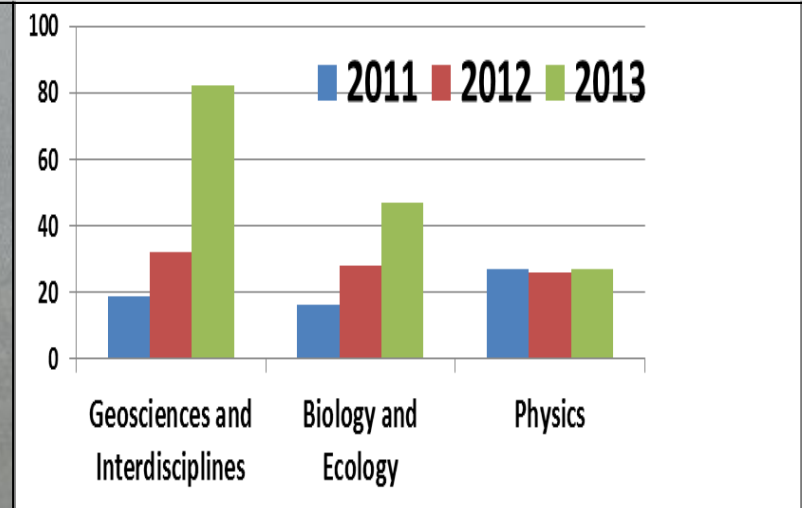
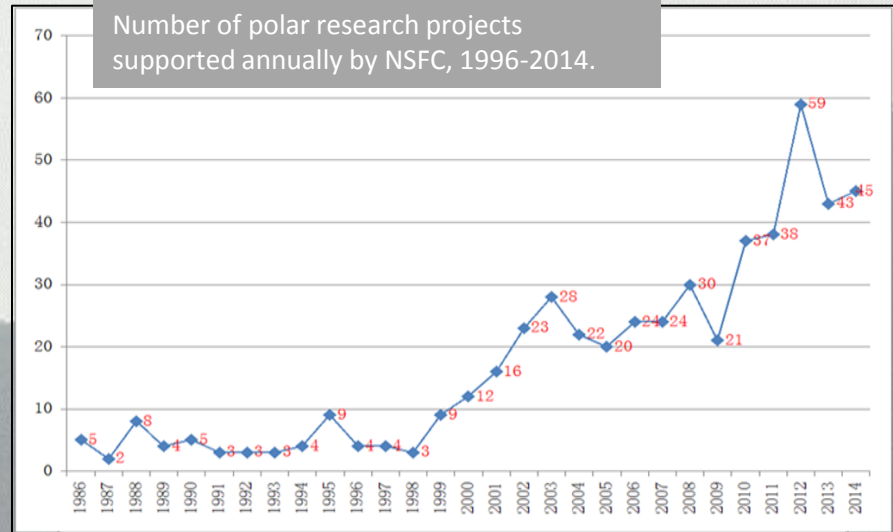
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# EXAMPLE OF NSF-BEIJING RESPONSE TO STPI RECS: in-depth, comprehensive reporting

China's polar research activity is growing as is its investment in polar infrastructure.



# NSF-BEIJING RESPONSE TO STPI RECS: in-depth, comprehensive reporting

- NSF Polar Programs sent a delegation to China in October 2014.
- Visited 8 research institutes/3 cities/4 days
- Connected with agencies responsible for polar research
- Identified many areas of collaboration



Report shared with  
NSF, State Dept.,  
OSTP, Coast  
Guard





# byssal threads and science diplomacy

Photo Credit: Emily  
Carrington, University  
of Washington,

NSF SEES Award  
1418875



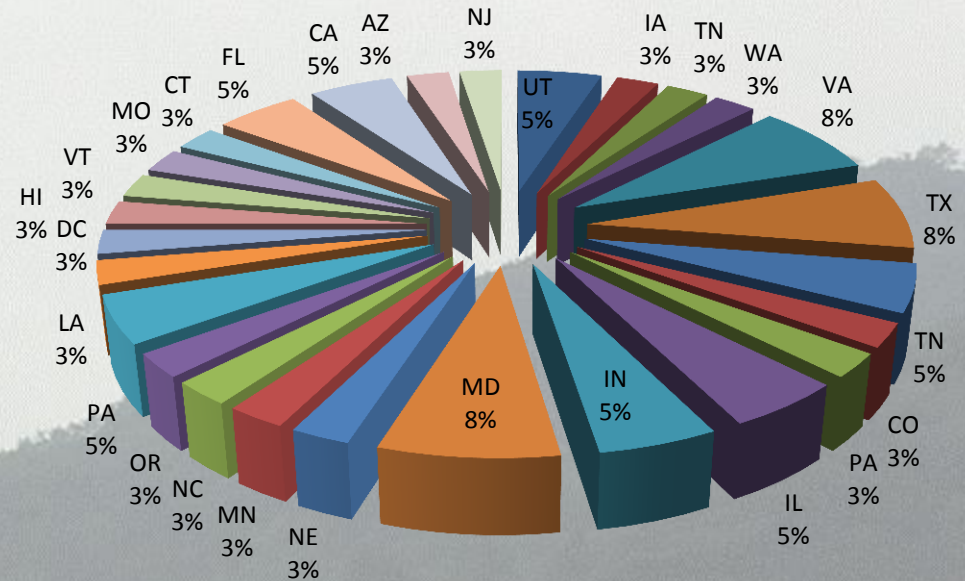
# Next Generation: MOST-NSF East Asia and Pacific Summer Institutes for U. S. Graduate Students [EAPSI]: China

- Joint program with Ministry of Science and Technology
- Each year, up to 40 graduate students conduct research for two months in China
- Call for Proposals in August

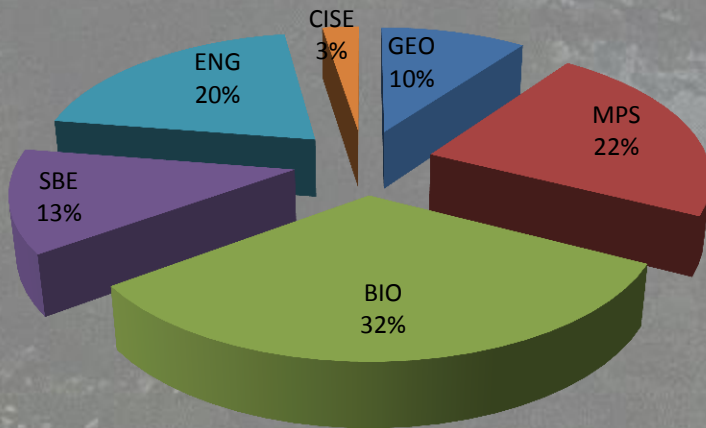




## EAPSI China 2015 by home states

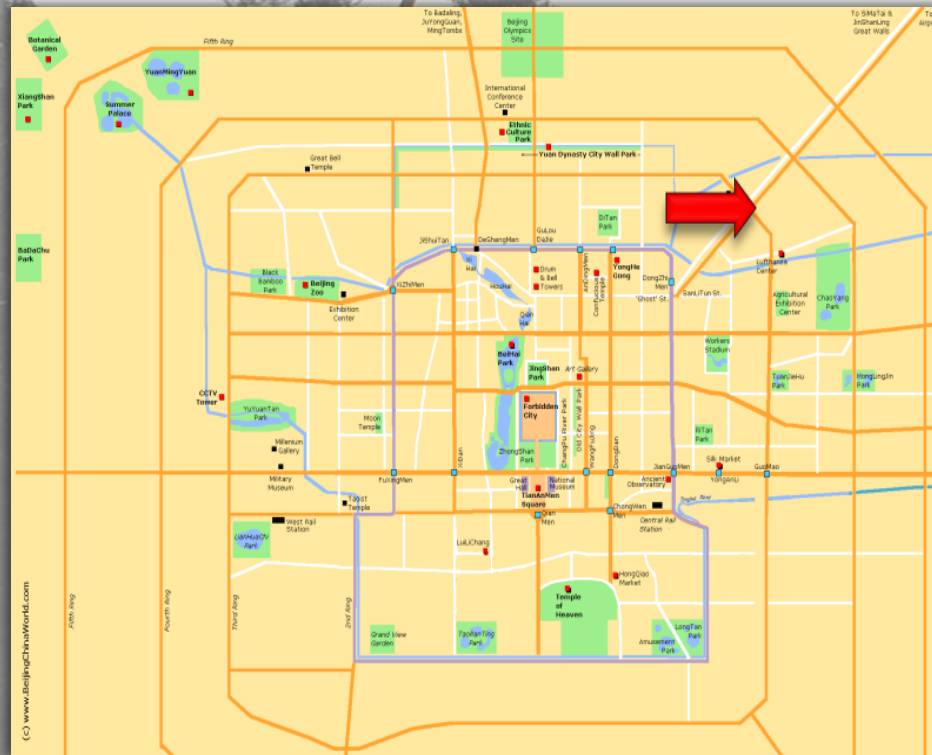


## EAPSI China 2015 by research fields



**EAPSI CHINA 2015:**  
Human byssal threads  
from 27 states across all  
fields

# Where are we?



NOW



SOON





# NSF China Team

**Beijing:**

**Shen Yu**

**Nancy Sung**

**Sun Bo**



**Arlington VA: Bill Chang**

**Akaysha Tang**

Photo credits: NSF Beijing Office